REMARKS/ARGUMENTS

This is a response to the Office Action mailed August 24, 2009. Claims 1-30, 32-47 and 71-84 remain pending in the present application after entry of this submission. Claims 1-30 and 32-47 were rejected. Claims 31 and 48-70 were previously canceled. Claims 71-84 are new claims added by this amendment. Applicant submits that no new subject matter has been introduced by the new claims or the amendments made to the existing claims.

Examiner Interview

Counsel for assignee thanks Examiner Patel for the courtesies extended during the telephonic interview conducted on November 16, 2009. During the interview, counsel for assignee and the Examiner discussed the rejection of the pending claims under 35 USC § 103(a). Counsel for assignee explained why the Maher reference (U.S. Patent No. 6,654,373) (hereinafter "Maher"), the Scholten reference (U.S. Patent No. 7,126,956), the Rajkumar reference (U.S. Patent No. 7,391,769) (hereinafter "Rajkumar") and the Walsh reference (U.S. Patent No. 7,561,590) (hereinafter "Walsh"), all fail to disclose the claimed limitations. During the interview, counsel for assignee explained that the references do not teach an "aggregation module adapted to analyze and combine the plurality of input data streams into one aggregated data stream in response to the at least one priority factor[[s]] and to generate a packet descriptor comprising a reference to a memory location of its analyzed data packet," as recited in claims 1-19. Counsel for assignee also explained that the references do not disclose "a memory coupled to said aggregation module, said memory adapted to store analyzed data packets; said memory comprising a plurality of priority queues each provided for a corresponding priority class, adapted to store the packet descriptor of each of the analyzed data packets classified to the corresponding priority class, the packet descriptor containing a reference to the memory location of its analyzed data packet in said memory," as recited in claims 1-19. The Examiner agreed that the references do not disclose these elements of the claims. Counsel for assignee also explained that the references do not teach a second data link having a second bandwidth smaller than the first bandwidth, where the second data link is adapted to output the aggregated data stream from

the aggregation module to a second processor, as recited in claims 20-30 and 47. Although no agreement was reached, the Examiner indicated that he would discuss the claims with his supervisor. The interview ended with counsel for assignee stating that he would prepare and submit a response to the Office Action incorporating the discussion with the Examiner, as appropriate.

Claim Rejection under 35 USC 103

In the Office Action, claims 1-15, 18, and 46 are rejected under 35 U.S.C. §103(a) as being unpatentable over Maher in view of Scholten. Claim 16 is rejected under 35 U.S.C. §103(a) as being unpatentable over Maher in view of Scholten as applied to claim 15 above, and further in view of Manaka et al (U.S. Patent No. 6,421,352) (hereinafter "Manaka"). Claim 17 is rejected under 35 U.S.C. §103(a) as being unpatentable over Maher in view of Scholten and Abbas et al (U.S. Patent No. 6,810,046) (hereinafter "Abbas"). Claims 19 and 45 are rejected under 35 U.S.C. §103(a) as being unpatentable over Maher in view of Scholten as applied to claims 18, 44 and 62 above, and further in view of Mackiewich et al (U.S. Patent No. 7,212,536) (hereinafter "Mackiewich"). Claims 20-30 and 47 are rejected under 35 U.S.C. §103(a) as being unpatentable over Maher in view of Scholten and Rajkumar et al (U.S. Patent No. 7,391,769) (hereinafter "Rajkumar"). Claims 32-44 are rejected under 35 U.S.C. §103(a) as being unpatentable over Maher in view of Scholten and Walsh (U.S. Patent No. 7,561,590) (hereinafter "Walsh").

Claims 1-19 and 46

In the previous response to Office Action dated June 15, 2009, the Applicant amended independent claim 1 and explained why the cited references do not disclose an aggregation module, as recited in independent claim 1. In the last Office Action, the Examiner maintained his rejection of the claims. The Office Action asserted:

> …an aggregation module coupled to said plurality of ingress data ports, the aggregation module adapted to analyze and combine the plurality of input data streams into one aggregated data stream in response to the priority factors **[Fig. 2, 140, Col. 6, lines 15-25]**

> and to generate a packet descriptor comprising a reference to a memory location of its analyzed data packet **[Col. 9, lines 37-54, the context is the memory location of the data packet]**;…

The Applicant respectfully traverses. In claim 1, the aggregation module is adapted to analyze and combine the plurality of input data streams into one aggregated data stream in response to at least one priority factor. The Office Action has asserted that the scanning processor 140 is an aggregation module as claimed. The Applicant submits that the scanning processor 140 is not an aggregation module because the data streams coming into scanning processor 140 have already been aggregated by the physical interface 102. In column 6 lines 5-25, Maher discloses:

> Input physical interface 102 can consist of a plurality of ports, and can accept any number of network speeds and protocols, including such high speeds as OC-3, OC-12, OC-48, and protocols including 10/100 Ethernet, gigabit Ethernet, and SONET. Input physical interface 102 takes the data from the physical ports, frames the data, and then formats the data for placement on fast-path data bus 126 which is preferably an industry standard data bus such as a POS-PHY Level 3, or an ATM UTOPIA Level 3 type data bus.
>
> Fast-path data bus 126 feeds the data to traffic flow scanning processor 140, which includes header processor 104 and payload analyzer 110. The data is first sent to header processor 104, which is operable to perform several operations using information contained in the data packet headers. Header processor 104 stores the received data packets in packet storage memory 106 and scans the header information. The header information is scanned to identify the type, or protocol, of the data packet, which is used to determine routing information as well as to create a session id using predetermined attributes of the data packet.

Maher further teaches that once the data packets arrive at the scanning processor 140, the data packets are analyzed one at a time and in the order in which they are received. Specifically in col. 9 lines 37-54, Maher teaches:

> Context engine 304 works with queue engine 302 to select a new context when a context has finished processing and been transmitted out of payload analyzer 110. Next free context/next

> free block engine 330 communicates with link list controller 314 to identify the next block of a data packet to process. **Since payload analyzer 110 must scan data packets in order, only one data packet or traffic flow with a particular session id can be active at one time.** Active control list 332 keeps a list of session ids with active contexts and checks new contexts against the active list to insure that the new context is from an inactive session id. When a new context has been identified packet loader 340 uses the link list information retrieved by the next free context/next free block engine to retrieve the required block of data from packet memory 112 using packet memory controller 316. The new data block is then loaded into a free buffer from context buffers 342 where it waits to be retrieved by payload scanning engine interface 344. (Emphasis added in bold.)

Since Maher teaches that aggregated packets arrives at the scanning processor 140 and then the packets are analyzed one at a time and in the order in which they are received, Maher cannot teach that the aggregation module is adapted to analyze and combine the plurality of input data streams into one aggregated data stream in response to the at least one priority factor. The scanning processor 140 does not aggregate data packets and further does not analyze and combine the plurality of input data streams into one aggregated data stream in response to the at least one priority factor.

The Office Action further asserted:

> …a memory coupled to said aggregation module, said memory adapted to store analyzed data packets **[Fig. 2, 112]**; the memory comprising a plurality of priority queues each provided for a corresponding priority class, adapted to store the packet descriptor of each of the analyzed data packets classified to the corresponding priority class, the packet descriptor containing a reference to the memory location of its analyzed data packet in the memory **[Fig. 2, 116, Col. 7, lines 34-53, packets are stored in different queues according to their priority and Col. 9, lines 37-54 teaches the context is the memory location of the data packet].**

The Applicant respectfully traverses. In claim 1, a memory is "coupled to said aggregation module, said memory adapted to store analyzed data packets; said memory adapted to store analyzed data packets; said memory comprising a plurality of priority queues each

provided for a corresponding priority class, adapted to store the packet descriptor of each of the analyzed data packets classified to the corresponding priority class, the packet descriptor containing a reference to the memory location of its analyzed data packet in said memory." In column 7 lines 34-53, Maher teaches that queuing is done in 132 which is connected to memory 118. Since, according to the Office Action, memory 112 is the memory used to store the analyzed data and memory 112 is different than memory 118, as illustrated in Maher's FIG. 2, Maher teaches storing analyzed data in a memory different than where the queues are located. Therefore, Maher cannot teach, a memory is "coupled to said aggregation module, said memory adapted to store analyzed data packets; said memory adapted to store analyzed data packets; said memory comprising a plurality of priority queues each provided for a corresponding priority class, adapted to store the packet descriptor of each of the analyzed data packets classified to the corresponding priority class, the packet descriptor containing a reference to the memory location of its analyzed data packet in said memory," as recited in claim 1.

In light of the above, the Applicant submits that claim 1 is patentable over a combination of Maher and Scholten. The Applicant submits that independent claim 46 includes similar language to claim 1 and is therefore patentable for similar reasons. The Applicant further submits that dependent claims 2-19, which depend either directly or indirectly from claim 1, are also not rendered obvious by a combination of Maher and Scholten for at least a similar rationale as discussed above for claim 1. The Applicant submits that the dependent claims are also patentable for additional reasons.

Claims 20-30, 47

In the Office Action claims 20-30 and 47 were rejected under 35 U.S.C. §103(a) as being unpatentable over Maher in view of Scholten and Rajkumar. The Office Action asserted:

> Rajkumar teaches a second data link coupled to the aggregation module, second data link having a second bandwidth smaller that the first bandwidth **[Fig. 1A, output is coupled to aggregator 104, Col. 4, lines 50-53, output rate is lower than input rate].**

The Applicant respectfully disagrees. In Fig. 1A and associated text, Rajkumar teaches that a buffer 102 located before an aggregation module can have an output rate that is lower than an input rate. Rajkumar is silent with respect to the output rate of the aggregation module. The Office Action appears to be taking the position that since Rajkumar's Fig. 1A shows a second buffer 106 located after the aggregation module then Rajkumar should be interpreted as teaching "a second data link coupled to said aggregation module, the second data link having a second bandwidth smaller than the first bandwidth, said second data link adapted to output the aggregated data stream from the aggregation module to the second processor." This however is unsupported by any of the teachings in Rajkumar. In column 4 lines 28-58, Rajkumar only discusses the input buffer 102 and fails to teach anything about the output of the aggregation module. Specifically column 4 lines 28-58 recite:

> The packets generated by the Vocoder are retrieved by **first buffer 102**. If a packet is generated and is not retrieved in time by **Buffer 102**, that packet is "dropped" meaning that the packet is lost; this is because the encoder (e.g., Vocoder) does not wait for **buffer 102** to retrieve the generated packet. Signal encoding is thus the process of generating compressed information (i.e., compressed bits) and arranging such information into packets whose configuration (header, payload, trailer) complies with the protocol being followed by the communication system through which such packets are to propagate. **Buffer 102** operates such that it retrieves the packets from the encoder at a rate equal to or greater than the fixed rate at which the encoder generates the packets. The packets generated by the encoder are temporarily **stored in buffer 102**. **Buffer 102** is any well known circuit or system used to temporarily store digital information. The packets can be retrieved from **Buffer 102** at a certain fixed rate or at variable rates. The information retrieved from **Buffer 102** is applied to aggregator 104. Depending on the processing speed of aggregator 104, **buffer 102** may have to perform buffer management; that is, **buffer 102** may have to temporarily store the incoming packets to allow aggregator 104 time-process the received information. Buffer management is the temporary storage of information being inserted in the buffer at a certain input rate to allow the information to be transferred out of the buffer at an output rate that is lower than the input rate. Each of the packets retrieved has its own header and tail

> information; this information is used by the communication system as per the protocol to route the packets as they propagate through the communication system. **The packets are retrieved from Buffer 102 by aggregator 104**. (Emphasis added in bold.)

The Applicant submits that there is no reason to conclude that the aggregation module's output data rate is lower than the aggregation module's input data rate. One skilled in the art would not conclude that Maher teaches that the aggregation module's output data rate is lower than the aggregation module's input data rate based just because Maher teaches that a buffer is positioned on the output of the aggregation module. Therefore, Rajkumar does not teach "a second data link coupled to said aggregation module, the second data link having a second bandwidth smaller than the first bandwidth, said second data link adapted to output the aggregated data stream from the aggregation module to the second processor," as recited in claim 20.

In light of the above, the Applicant submits that claim 20 is patentable over the combination of Maher, Scholten and Rajkumar. The Applicant submits that independent claim 47 includes similar language to claim 20 and is therefore patentable for similar reasons. The Applicant further submits that dependent claims 21-30, which depend either directly or indirectly from claim 20, are also not rendered obvious by a combination of Maher, Scholten and Rajkumar for at least a similar rationale discussed above for claim 20. Applicant submits that the dependent claims are patentable for additional reasons.

Claims 32-45

In the Office Action, claims 32-44 were rejected under 35 U.S.C. §103(a) as being unpatentable over Maher in view of Scholten and Walsh. Claim 45 was rejected under 35 U.S.C. §103(a) as being unpatentable over Maher in view of Scholten and Walsh as applied to claim 44 and further in view of Mackiewich.

The Office Action asserts that "Maher III, teaches a method for aggregating a plurality of input data streams **[Fig. 2 100]**," as recited in claim 32. The Applicant respectfully traverses. In claim 32, the method recited is for "aggregating a plurality of input data streams

from first processors into one data stream for a second processor." The Office Action has asserted that in Maher's Fig. 2, the scanning processor 140 is an aggregation module. However, Maher teaches that incoming data streams are aggregated by the physical interface 102 and not the scanning processor 140. The Applicant submits that since the scanning processor 140 does not aggregate the incoming packets, Maher does not teach a method for aggregating plurality of input data streams in Fig. 2 100, as recited in the claim.

In addition, and as explained in the previous responses to Office Action, the Applicant maintains his belief that the cited references do not disclose a "packet descriptor" as recited in the claims. In the Office Action, the Examiner appears to have interpreted Maher's "context" to be a "packet descriptor." As best understood, a *context*, as used in Maher, is a 64 byte block of a packet belonging to a particular traffic flow. Since the context is a piece of a packet, unlike the packet descriptor recited in claim 32, it is not generated from analyzing an ingress data packet. Further, as recited in claim 32, the arbitrating and selecting is done using the packet descriptors. There appears to be no such teaching in Maher. In Maher, the processing seems to be done using the packets or portions of the packet. The Applicant submits that none of the other references including Walsh teach anything about a packet descriptor, as recited in claim 32, that contains a reference to a memory location of the analyzed packet stored in the memory Applicant subsequently submits that the processing done using a packet descriptor, as recited in claim 32, is also not taught by Maher, Scholten or Walsh.

In light of the above and other reasons articulated in the previous response to Office Action and incorporated herein by reference, the Applicant submits that the concepts of a packet descriptor and its use for aggregating data streams, as recited in claim 32, are not taught or suggested by Maher. The Applicant further submits that the dependent claims 33-45 which depend either directly or indirectly from claim 32 are also not rendered obvious by a combination of Maher and Scholten for at least a similar rationale discussed above for claim 32. Applicant submits that the dependent claims are patentable for additional reasons.

New Claim and Amendments

Claims 71-84

Claims 71-84 are new claims added by this amendment. Support for new claims 71-84 can be found throughout the originally filed application, which includes the specification, claims and figures. For example, support for new claims 71-84 can be found in figures 2 and 3 and paragraphs [0017] through [0023] of the originally filed application. The Applicant believes that new claims 71-84 are patentable over the references relied on by the Office Action in the rejection for at least a similar rationale as discussed above for claims 1-30 and 32-47. The amendments to the claims are not intended to alter the scope of the claims or limit any equivalents thereof.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

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